

**DELAWDER COMMUNICATIONS, INC.**

P.O. Box 1095  
Ashburn, Virginia 20146-1095  
(703) 299-9222

**ENGINEERING REPORT**

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**Plainview, TX, Channel 288D FM Translator Application**

**ENGINEERING STATEMENT**

Christina G. Benavides ("Applicant") submits this Long-form Application that covers its pending Auction 83 Short-form Application for a new FM translator station at Plainview, TX. The pending application file number is BNPFT-20030317AGO.

**Except for the replacement of one omni-directional antenna model with another omni-directional antenna model, there are no tech box changes being made by this long-form application.**

**CHANNEL STUDY**

Attached as Figure EE1 is a channel study for the proposed channel 288D facility. All required protections are met by contour non-overlap pursuant to Section 74.1204, with the exception of protection to KBTE, Tulia, TX, 285C1. KBTE is protected, as discussed below.

**CONTOUR OVERLAP SHOWING**

No detailed study is required due to contour non-overlap clearance as listed in Figure EE1 for each protected facility (with the exception of KBTE, discussed below). The service and interference contour distances that are listed on Figure EE1 use the worst-case (greatest) distance along any bearing for each facility, and also considers each protected station as omni-directional. No contour overlap using this worst-case test means no possible contour overlap when applying Section 73.313 methodology.

**PROTECTION TO KBTE**

KBTE, Tulia, TX, 285C1, is third adjacent-channel to the proposed channel 288D facility and is located only 29.4 kilometers (at 149 degrees True bearing) from the proposed 288D transmitter site. The 60 dBu F50,50 service contour extends well

beyond the 288D transmitter site. Using the well-established *Living Way Ministries* Methodology, no actual interference to any population is predicted to exist to KBTE.

Note that a rule waiver of Section 74.1204 for this second/third adjacent-channel protection using the well-established *Living Way Ministries* Methodology is respectfully requested if such a rule waiver is deemed necessary for protection to this station.

The F50,50 signal strength from KTBE at the proposed 288D transmitter site is 80.6 dBu (the “desired” signal). The second/third adjacent-channel protection of Section 74.1204 is an undesired-to-desired (“U/D”) dB signal strength ratio of 40:1. Therefore, predicted interference to KTBE from the proposed 288D facility is a signal of greater than or equal to 120.6 dBu.

Figure EE2 is the vertical plane relative field pattern for the proposed antenna. By adjusting for the vertical plane downward relative field values of the proposed antenna, it is herein demonstrated that the 120.6 dBu interfering signal (using a free space field determination) does not exist at any point a ground level. (Actually, the study is made to 2 meters above ground level to account for a person’s height.)

Attached as Figure EE3 is a tabulation of various points (at 2 meters above ground level) from the proposed translator tower base. (Column B is the different distances from the tower base to each studied point.) The actual distance from the antenna to each point is listed in Column C, the hypotenuse of the vertical height (Column A) and the horizontal distance (Column B). Because the calculated distance to the free space interfering signal (Column J) is less than the hypotenuse distance (Column C) for each studied point, the interfering signal does not reach any studied point. (In other words, the interfering signal does not make it to 2 meters above ground level to any point.) Therefore, pursuant to Section 74.1204(d) of the FCC Rules, KBTE is adequately protected by the proposed facility.

The above study results of Figure EE3 assume uniform terrain elevation near the proposed tower. Because the clearance shown (Column C minus Column J values) is at least 30 meters for all rows, this assumption is acceptable for showing non-interference—no actual elevation within 100 meters of the proposed translator tower is at an elevation that is more than 10 meters above that of the tower base elevation.

## **AERIAL PHOTO**

Figure EE4, attached, is an aerial photo of the proposed transmitter site. There are no homes or other residences located within 100 meters of the proposed site. Also, all nearby buildings shown on the photo are less than 10 meters in height.

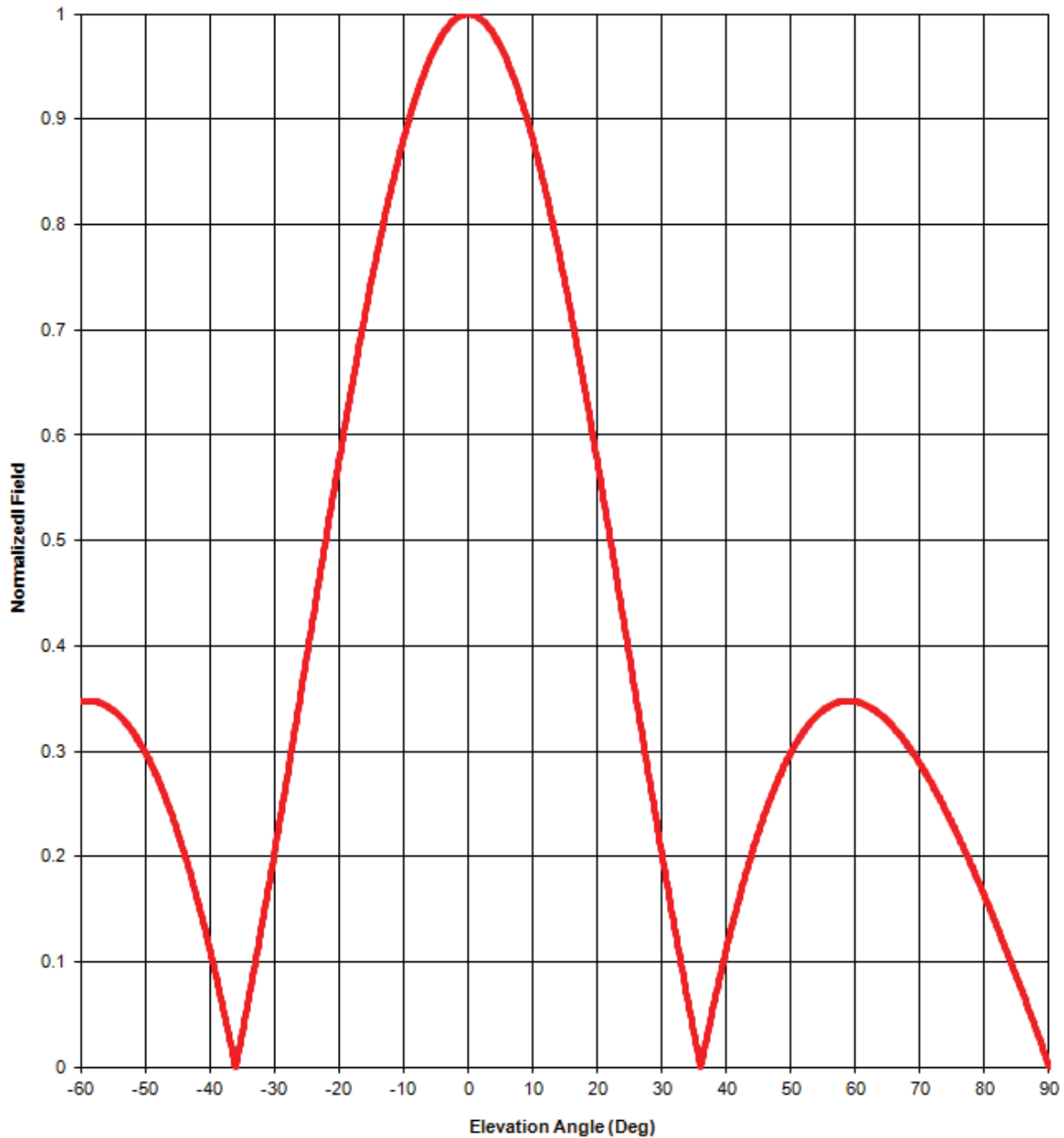
**SECTION 74.1204 CHANNEL STUDY****PROJECT: PLAINVIEW,TX, 288D FROM PROPOSED SITE****STUDY COORDINATES: N 34-11-13.0; W 101-45-08.0(N D-M-S; W D-M-S)**

Call Docket	Channel FacilityID	Class Service   ERP	Frequency Status DA?	City HAAT	State RCAMSL	Country RCAGL	File Number
Latitude	Longitude	ASRN	Dist(km)	Dist(mi)	Azimuth		
Licensee/Permittee							
KBTE	285 C1	FM 104.9 MHz	LIC	TULIA	TX	US	BMLH-20051013AAC
-	1302	99. kW		298. m	1286. m	286. m	
N 33 57	35.00	W 101 35	20.00	1239447	29.37 km	18.25 mi	149.18°
WILKS LICENSE COMPANY-LUBBOCK LLC							
<b>NOTE: A SHOWING BASED ON THE LIVING WAY MINISTRIES METHODOLOGY TO THIS STATION IS INCLUDED WITH THIS APPLICATION THAT DEMONSTRATES PROTECTION TO THIS FACILITY.</b>							
KJDL-FM	287 C2	FM 105.3 MHz	LIC	LEVELLAND	TX	US	BLH-20071004ACA
-	30027	23.5 kW		217. m	1232. m	216. m	
N 33 25	24.00	W 102 7	41.00	1257252	91.57 km	56.90 mi	202.35°
WALKER FM HOLDINGS, LLC							
<b>Protected Contour Dist: 53.2 km Prop 288D Interf Contour Dist: 12.3 km</b>							
<b>Result: 26.1 km CLEAR (WORST-CAST STUDY)</b>							
NEW	288 D	FX 105.5 MHz	APP	PLAINVIEW	TX	US	BNPFT-20030317AGO
-	145637	0.099 kW		0. m	1084. m	55. m	
N 34 11	13.00	W 101 45	8.00	1200135	0.00 km	0.00 mi	0.00°
CHRISTINA G. BENAVIDES							
<b>NOTE: THIS IS THE AUCTION 83 SHORT-FORM APPLICATION THAT IS BEING COVERED BY THIS LONG-FORM APPLICATION</b>							
KRBL	289 A	FM 105.7 MHz	LIC	IDALOU	TX	US	BLH-19960111KH
-	68155	5.5 kW		100. m	1068. m	98. m	
N 33 39	47.00	W 101 35	52.00	1053669	59.84 km	37.18 mi	166.21°
WILLIAM							
<b>Protected Contour Dist: 30.2 km Prop 288D Interf Contour Dist: 12.3 km</b>							
<b>Result: 17.3 km CLEAR (WORST-CAST STUDY)</b>							
KFLP-FM	291 C3	FM 106.1 MHz	LIC	FLOYDADA	TX	US	BLH-20010824AAK
-	57025	25. kW		71. m	1033. m	65. m	
N 33 58	7.00	W 101 21	15.00	1055955	44.00 km	27.34 mi	123.40°
ANTHONY L. RICKETTS							
<b>Protected Contour Dist: 38.7 km Prop 288D Interf Contour Dist: &lt;1.0 km</b>							
<b>Result: 4.3 km CLEAR (WORST-CAST STUDY)</b>							

Study Complete

## Elevation pattern

FIGURE EE2 (Page 1 of 2)



Antenna model: 6812b, 2-bay full-wave-spaced

Test frequency: 98.1 MHz

Gain (maximum):

Power	dB
1.00	0.02 dB

Document No. 6812b 2-bay fw (130701)

A Division of Howell Laboratories, Inc., P. O. Box 389, Bridgton, Maine 04009 USA

(207) 647-3327

1-888-SHIVELY

Fax: (207)647-8273

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FIGURE EE2 (Page 2 of 2)

Degrees	Rel. Field	Degrees	Rel. Field	Degrees	Rel. Field	Degrees	Rel. Field	Degrees	Rel. Field
1	0.999	19	0.612	37	0.029	55	0.339	73	0.256
2	0.995	20	0.576	38	0.058	56	0.343	74	0.244
3	0.989	21	0.539	39	0.086	57	0.346	75	0.231
4	0.980	22	0.502	40	0.112	58	0.348	76	0.218
5	0.969	23	0.465	41	0.137	59	0.348	77	0.205
6	0.956	24	0.427	42	0.161	60	0.347	78	0.191
7	0.941	25	0.389	43	0.183	61	0.345	79	0.177
8	0.923	26	0.352	44	0.204	62	0.343	80	0.162
9	0.903	27	0.314	45	0.224	63	0.339	81	0.148
10	0.881	28	0.277	46	0.242	64	0.334	82	0.132
11	0.858	29	0.240	47	0.258	65	0.328	83	0.117
12	0.832	30	0.203	48	0.273	66	0.322	84	0.101
13	0.805	31	0.168	49	0.287	67	0.315	85	0.085
14	0.776	32	0.132	50	0.299	68	0.306	86	0.069
15	0.745	33	0.098	51	0.310	69	0.298	87	0.052
16	0.714	34	0.065	52	0.319	70	0.288	88	0.036
17	0.681	35	0.032	53	0.327	71	0.278	89	0.018
18	0.647	36	0.001	54	0.334	72	0.267	90	0.000

### Elevation Pattern Tabulation

Antenna model: 6812b, 2-bay full-wave-spaced

Relative Field at 0° Depression = 1.000

## FIGURE EE3

### FREE SPACE FIELD STRENGTH AT A DISTANCE STUDY TO KBTE

PROJECT: PLAINVIEW, TX, CHANNEL 288D

13-Aug-13

	Column A	Column B	Column C	Column D	Column E	Column F	Column G	Column H	Column I	Column J
	Vertical	Horizontal	Hypotenuse	Downward			Pattern	Free	Adjusted	
	Distance	Distance	Distance	Angle			Relative	Space	ERP in	
	From	From	From	From			Field at	Inter-	Down-	
	Antenna	Tower	Antenna	Antenna	Max	Max	Down-	ferring	ward	<b>OUTPUT</b>
	Bottom	Base	Bottom	Bottom	ERP	ERP	ward	Signal	Angle	<b>Distance</b>
<u>Point</u>	<u>(meters)</u>	<u>(meters)</u>	<u>(meters)</u>	<u>(degrees)</u>	<u>(watts)</u>	<u>(dBmW)</u>	<u>Angle</u>	<u>(dBu)</u>	<u>(dBmW)</u>	<u>(meters)</u>
1	49	0.1	<b>49.0</b>	<a href="#"><u>89.9</u></a>	99	<a href="#"><u>49.96</u></a>	0.018	120.6	<a href="#"><u>15.06</u></a>	<b>1.2</b>
2	49	10	<b>50.0</b>	<a href="#"><u>78.5</u></a>	99	<a href="#"><u>49.96</u></a>	0.191	120.6	<a href="#"><u>35.58</u></a>	<b>12.5</b>
3	49	20	<b>52.9</b>	<a href="#"><u>67.8</u></a>	99	<a href="#"><u>49.96</u></a>	0.315	120.6	<a href="#"><u>39.92</u></a>	<b>20.6</b>
4	49	30	<b>57.5</b>	<a href="#"><u>58.5</u></a>	99	<a href="#"><u>49.96</u></a>	0.348	120.6	<a href="#"><u>40.79</u></a>	<b>22.7</b>
5	49	40	<b>63.3</b>	<a href="#"><u>50.8</u></a>	99	<a href="#"><u>49.96</u></a>	0.310	120.6	<a href="#"><u>39.78</u></a>	<b>20.3</b>
6	49	50	<b>70.0</b>	<a href="#"><u>44.4</u></a>	99	<a href="#"><u>49.96</u></a>	0.224	120.6	<a href="#"><u>36.96</u></a>	<b>14.6</b>
7	49	60	<b>77.5</b>	<a href="#"><u>39.2</u></a>	99	<a href="#"><u>49.96</u></a>	0.112	120.6	<a href="#"><u>30.94</u></a>	<b>7.3</b>
8	49	70	<b>85.4</b>	<a href="#"><u>35.0</u></a>	99	<a href="#"><u>49.96</u></a>	0.032	120.6	<a href="#"><u>20.06</u></a>	<b>2.1</b>
9	49	80	<b>93.8</b>	<a href="#"><u>31.5</u></a>	99	<a href="#"><u>49.96</u></a>	0.168	120.6	<a href="#"><u>34.46</u></a>	<b>11.0</b>
10	49	90	<b>102.5</b>	<a href="#"><u>28.6</u></a>	99	<a href="#"><u>49.96</u></a>	0.277	120.6	<a href="#"><u>38.81</u></a>	<b>18.1</b>
11	49	100	<b>111.4</b>	<a href="#"><u>26.1</u></a>	99	<a href="#"><u>49.96</u></a>	<b>1.000</b>	120.6	<a href="#"><u>49.96</u></a>	<b>65.4</b>

NOTE: Study point at 2 meters above ground level.

Worst-case relative field of 1.000 used for last examined point.

**RESULTS: COLUMN J DISTANCES ARE LESS THAN COLUMN C DISTANCES IN ALL INSTANCES; THEREFORE, INTERFERRING SIGNAL DOES NOT EXIST AT ANY LOCATION (TWO METERS OR LESS ABOVE GROUND LEVEL)**

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FIGURE EE4: AERIAL PHOTO OF PROPOSED TRANSMITTER SITE  
PLAINVIEW, TX, 288D



Google earth

feet 600  
meters 200

